Frequently Asked Questions about Mercury and Fish Tissue Advisories

What is the Geographic Extent of the Big Sandy Advisory?

The mainstem Big Sandy River and the entirety of Big Sandy Embayment are both included in the advisory. The northern extent of the advisory is latitude 36.407, a line running westward between Pace Point and the same latitude within Big Eagle Recreation Area. See provided maps

What Nearby Waterbodies Are Not Included in the Advisory?

Kentucky Reservoir outside of the Big Sandy Embayment is not included in the advisory. Eagle Creek embayment and the waters immediately south and east of Paris Landing State Park are not included. Fish in the West Sandy Creek embayment (separated from Big Sandy embayment by a dike) have not been tested and are not included in the advisory. The small tributaries to Big Sandy River are not included.

Why Does TDEC Issue Fishing Advisories?

When contaminants in fish tissue exceed certain levels, fish consumption advisories are issued by the state to give local anglers the information they need to make health-based decisions whether or not to eat the fish they catch from a Tennessee waterbody.

What Is TDEC's Legal Authority to Issue Advisories?

The Tennessee Water Quality Control Act instructs that when the Commissioner of TDEC finds that specific waters contain pollutants at levels that pose a risk to public health, to "post or cause to be posted such signs as required to give notice to the public of the potential or actual dangers of specific uses of such waters." While TDEC has the mandate to issue these advisories, the department does not have authority to restrict commercial or recreational fishing. That authority lies with the Tennessee Wildlife Resources Agency.

How Are Advisories Communicated to the Public?

Stream postings, where justified, are communicated to the public in multiple ways:

- Signs warning the public of the nature of the threat, plus the activities that should be avoided, are posted at obvious public access points,
- Press releases are issued,
- Information is included in departmental publications such as the 305(b) Report,
- A list of current postings is maintained on the department's webpage,
- Information concerning advisories is directly provided to fishermen by the Tennessee Wildlife Resources Agency.
- Public meetings are held as requested.

What Is Mercury and What Are Its Health Effects?

Mercury is a metal that is a neurological toxin with a well-documented link to environmental harm and human health impacts. Ingested mercury is readily carried throughout the body by the bloodstream and easily migrates through the placenta to the developing fetus. The consumption of contaminated fish is considered to be the major pathway of exposure for most people.

Mercury has been distributed globally and because many populations have been exposed to mercury in various amounts, human health effects studies have been undertaken in multiple locations. High dosage exposure to mercury occurred in Japan and Iraq. Observed effects included death, mental retardation, cerebral palsy, deafness, blindness, and severe motor impairment.

Three large epidemiological studies were completed which investigated effects from lower-level mercury exposures in children. In the Seychelles Islands, no statistically significant differences were documented. However, in the Faroe Islands, diminished memory, attention, and language skills were noted in children exposed to higher mercury levels. In New Zealand, exposed children also exhibited neurological deficiencies in tests.

According to EPA, effects were noted in some of the studies at levels "within the range of some U. S. population exposures" (EPA, 2001)

How Does Mercury Get Into The Fish? What Are the Sources?

The sources of mercury in the environment can include both local and distant water and air emissions. The specific sources of mercury in many Tennessee waters are difficult to accurately quantify at this time. In most cases, current water discharges by industry are unlikely to be the source. However, where current water discharges of mercury are documented, discharge permits will be reevaluated to insure that public health goals are met.

What Are the Different Levels of Fish Tissue Advisories Issued by TDEC?

Precautionary fish consumption advisories are directed at sensitive populations such as children, pregnant women, nursing mothers and those who each fish frequently from the same body of water. The department urges people in these groups to avoid eating the identified fish from specified waters.

When mercury levels are higher, a "no consumption" advisory can be issued to warn the public that fish from that body of water be not be consumed in any amount.

What Are the Numeric Triggers for Issuing Fishing Advisories for Mercury?

These levels are established in the regulation containing water quality criteria. When the levels of mercury in fish fillets in fish of a size likely to be consumed by the public exceed 0.3 mg/kg (parts per million) a precautionary advisory is issued.

If fish tissue levels exceed 1.0 mg/kg, a "do not consume" advisory is issued.

Does the Fishing Advisory Impact Bass Fishing Tournaments?

No. By typical bass tournament rules, bass are caught and kept alive in oxygenated live wells on the boat until taken to an official weigh-in station. Following the conclusion of the tournament, bass are returned unharmed to the lake. Because the tournaments are by rules "catch and release" there is no consumption of fish and therefore no exposure to mercury.

It is also important to note that the advisory for adults (if not pregnant or nursing mothers) is that one meal or less per month of bass from the Big Sandy Embayment can be safely eaten without measurably increasing risk from mercury. So occasionally eating bass from this area is within the guidelines. Adults who visit the Big Sandy area to fish (in tournaments or on vacation, for instance) are not at increased risk if they eat more than the recommended monthly amount, since it is not consistent consumption over time.

Are Mercury Levels Increasing in Fish in Tennessee?

The department's issuance of these fish consumption advisories should not be taken as evidence that mercury levels are increasing in Tennessee fish, but rather that continuing scientific research has indicated the levels of mercury considered safe for children and pregnant and nursing mothers should now be set at a lower level.

Most Advisories for Mercury Are For Bass Species. Why Is This?

Bass species are predator fish at the top of the aquatic food chain, so mercury tends to biomagnify (build up at higher levels) in them. Also, because mercury tends to accumulate in muscle tissue rather than in fat, as is the case with organic compounds such as PCBs, they tend to accumulate in greater concentrations in the more muscular gamefish rather than the fattier rough fish or catfish. For the same reason, some of the conventional wisdom concerning ways to reduce the contaminant levels in fish by broiling the catch or by removing as much fat as possible, are not effective with mercury

What About Crappie and Bluegill?

AS previously stated, bass species are apex predator fish at the top of the aquatic food chain, so mercury tends to biomagnify (build up at higher levels) in them. In our studies of fish tissue contaminant concentrations across the state, it is very rare for crappie or bluegill to have elevated levels.

The Advisory Is About Eating Fish. Do Other Activities on This Body of Water Carry Risk From Mercury?

These advisories pertain only to fish consumption. Swimming, boating, wading, or catch and release fishing from these waters carries no risk. Tap water from approved providers does not contain mercury.

Why Does TDEC Consider Streams and Lakes Polluted by Mercury When There Is An Advisory?

Because the public's ability to safely eat the fish they catch is an important recreational use of Tennessee's waters, the issuance of consumption advisories is considered a loss of this use. The streams with mercury advisories will be added to Tennessee's compilation of water quality impaired waters, called the 303(d) List.

Additional information about mercury related fishing advisories, as well as other fishing and water contact advisories, is available on the department's Web site at:
http://www.tn.gov/assets/entities/environment/attachments/water_fish-advisories.pdf